

CARBON LIMITS

Stakeholder mapping report

Technology Needs Assessment and associated action plan for climate change mitigation and adaptation in Iraq's most vulnerable economic sectors

CTCN

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Disclaimer

This document is an output of the Technology Needs Assessment project in Iraq, funded by the Green Climate Fund (GCF) and implemented by the United Nations Industrial Development Organization (UNIDO) in collaboration with United Nations Environment Programme (UNEP). The present report is the output of a country-led process and the views and information contained herein are a product of the international TNA Implementation team, led by Carbon Limits and Iraqi Green Climate Organization (IGCO).

Introduction

This report is an output of the CTCN project “Technology Needs Assessment (TNA) and associated action plan for climate change mitigation and adaptation in Iraq’s most vulnerable economic sectors”. The aim of the study is to enable Iraq to implement its climate targets, including the commitments under the Paris Agreement, using the most appropriate technologies. The TNA and associated action plans will provide the necessary guidance to evolve prioritized technologies and help address country’s needs in climate change adaptation and mitigation.

The TNA process needs to be country-driven and take into account national development priorities. Legitimacy and ownership of the decisions made throughout the TNA development process will ensure that the technologies prioritized will have a higher chance of being accepted and implemented in the country upon completion of the project. Stakeholders involved in the TNA process are different in nature, represent both the public and the private sector and thus, should be involved at different stages of the project in order for the final action plans to be feasible and action-oriented.

This document is based on the available guidance on identification and engagement of stakeholders in the TNA process, previously developed and implemented by the UNEP-DTU Partnership in a large number of countries.¹

The methodology to map the stakeholders included the following steps:

- Identification – where all relevant organizations, institutions and individuals were identified through both desk study as well as consultations with a selected stakeholder group
- Analysis – information about responsibilities, mandates, interests of the wider list of stakeholders was collected through a consultation workshop (January 14th 2021) and questionnaires shared with the selected stakeholder group
- Mapping – drawing relationships between the different stakeholder groups in order to identify the key stakeholders
- Planning of stakeholder engagement – selection of the most relevant stakeholders for engagement at specific project phases and methods for stakeholder engagement

These are described in more detail in the sections below.

¹ UNEP-DTU Partnership, 2015. Identification and engagement of stakeholders in the TNA process. Available at: <https://tech-action.unepdtu.org/publications/identification-and-engagement-of-stakeholders-in-the-tna-process/>

Identification, analysis and mapping of stakeholders

Identification of stakeholders began with a desk study and mapping of broad categories of stakeholders relevant for climate mitigation and adaptation in Iraq, who have strong relevance and can positively impact the deployment of climate technologies. The following groups have been identified:

- Ministries, departments and individuals that are responsible for development of policies and regulations in the key sectors considered (energy, industry, water and agriculture)
- Industry associations and businesses operating in the selected key sectors and that either have a significant impact on climate change or are vulnerable to it
- Private sector responsible for technology development and use in selected sectors
- Electricity utilities
- Finance sector that could be involved in providing (co-)financing for the climate mitigation and adaptation projects
- Local communities who could be potential users of the technologies and who experience effects of climate change (e.g. farmers in southern regions)
- NGOs involved in promoting sustainable development and climate change mitigation and adaptation
- Academia, research institutions, think tanks that generate knowledge and provide technical support to government and industry
- Media
- International organizations, cooperation agencies and donors

In addition to the key groups of stakeholders, the team has also identified the possible engagement areas with the stakeholders in Iraq, i.e. how can stakeholders contribute to making the TNA process adapted to local conditions, robust and effective. The following roles were identified:

1. Providing data and technical assistance (on emissions, technologies, barriers, costs, etc)
2. Providing financing for project implementation
3. Political decision making
4. Social and institutional support, including dissemination of results
5. Project beneficiary

The exercise of mapping of stakeholders continued with consultations with a key group of relevant members of the key ministries, academic and non-profit institutions in Iraq. A workshop, involving stakeholder discussion, took place in Baghdad in January 2021. The feedback on stakeholders that should be engaged in the TNA process was collected during discussions and using the following template²:

Table 1: Stakeholder identification template

Stakeholder	Category	Interests	Role	Relevance
Name of identified stakeholder	- Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	- Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority)	Importance to technology transfer process
<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least</i>

² Based on CTCN Request Incubator Programme report "Mapping Climate Technology Stakeholders"

important, 5 – most important

Responses collected from the participants are presented in the Annex 1. Overall, in addition to the implementing team (Carbon Limits and Iraqi Green Climate Organization (IGCO), as well as the Project Management Unit (PMU) at the Ministry of Health and Environment), ten other institutions and organizations have filled out and submitted the template:

1. Ministry of Oil
2. Ministry of Industry and Minerals
3. Ministry of Agriculture
4. Ministry of Water Resources
5. Ministry of Planning
6. Ministry of Higher Education
7. Ministry of Science and Technology
8. Ministry of Transportation
9. Ministry of Construction and Housing
10. Baghdad municipality

The table required to provide information about possible stakeholders relevant for the TNA process, categorise them, indicate their interest in the technology transfer process, and identify their potential role. It also asked to rank the relevance of the identified stakeholders. The results of the survey are presented below (ranked from the most frequently mentioned stakeholders to the least frequent).

Stakeholder	Category	Frequency	Relevance	Interests	Role	Comments
		<i>How many stakeholders from 1 to 5 (of 10 max) identified this stakeholder</i>	<i>On a scale from 1 to 5 (5 – most important)</i>	<i>Potential interests of the stakeholders in the TNA process</i>	<i>Possible role of the stakeholder in the TNA process</i>	
Ministry of Electricity	National and municipal government	8	4	- Synergy with other projects - Use of oil and gas products for power generation - Use of water for its current and future projects	- Project beneficiary - Information provider and support	
Ministry of Higher Education	National and municipal government	8	2.3	- Expertise and knowledge sharing, and exchanging data to conduct research and studies - Synergy with other projects	- Data and knowledge provider - Social and institutional support	Dr.. Aws Hilal Hilal Jasim/ Department of Research and Development Dr. Abdulhameed Muhammed Jawad/ Environmental Research Centre/ University of Technology
Ministry of Industry and Minerals	National and municipal government	5	2.6	- Strategic development - Expertise and knowledge sharing - Synergistic work	- Data or information provider (academia, industry) - Project beneficiary	Department of Industrial development General Directorate of Industrial Development
Ministry of Health and Environment	National and municipal government	5	4.5	- Cooperation; exchanging environmental pollution data and information; apply solutions, and monitor and assess the environmental response - Expertise and knowledge	- Data or information provider (academia, industry) - Project beneficiary	

				sharing - Synergy with other projects	- Social and institutional support	
Ministry of Oil	National and municipal government	5	2.5	- Synergy with other projects	- Support - Project beneficiary	
Ministry of Construction and Housing	National and municipal government	5	4.5	- Strategic development of the sector - Expertise sharing - Synergistic work - Increase financial gain through properties	- Decision maker, - Data provider - Project beneficiary	
Ministry of Agriculture	National and municipal government	5	3.8	- Synergy with other projects - Financial gain - Strategic development of the sector - Expertise and knowledge sharing	- Data or information provider - Project beneficiary	
Ministry of Planning	National and municipal government	5	4	- Strategic development of the different sector through allocation of investment budget for projects	- Data and information provider - Project beneficiary - Social and institutional support	Maysoon Abduljawad
Baghdad Municipality	National and municipal government	5	4.4	- Synergy with other projects	- Expertise sharing - Decision maker - Project beneficiary	
Private sector	Private sector	5	3.6	- Synergistic work - Expertise sharing	- Project beneficiary	
Ministry of Science and technology	National and municipal government	4	3.7	- Expertise and knowledge sharing - Implementation of other joint projects (cooperation)	- Technical support - Data and information provider	
Ministry of Water Resources	National and municipal government	4	3.7	- Strategic development of the sector - Expertise and knowledge sharing - Synergy with other projects	- Data or information provider (academia, industry) - Project beneficiary	
Farmers	Private sector	4	2.6	- Synergistic work - Financial gain	- Project beneficiary - Data and information provider	Beekeepers, livestock breeders, seed producers

Ministry of Finance	National and municipal government	3	5	- Increase financing and allocations - Financial gain	- Political decision maker - Project beneficiary
Ministry of Interior	National and municipal government	2	3	- Synergy with other projects	- Providing data and information - Logistic support
Ministry of Transportation	National and municipal government	2	3.5	- Synergy with other projects	- Project beneficiary (gas as fuel)
Importing companies	Private sector	2	3	- Financial gain	- Project beneficiary
Border ports authorities	Authorities	2	2	- Synergy with other projects	- Project beneficiary
Public traffic authorities	Authorities	2	2.5	- Synergy with other projects	- Data provider - Support - Project beneficiary
Ministry of Commerce	National and municipal government	1	4	- Synergy with other projects	- Social support
Ministry of Defence	National and municipal government	1	4	- Synergy with other projects	- Providing data and information - Logistic support
Council of Ministers	National and municipal government	1	3	- Strategic development of the country	- Political decision makers
Council of Parliaments	National and municipal government	1	3	- Strategic development of the country	- Political decision makers
Farmers Associations	Industry association	1	3	- Synergistic work	- Social support
Syndicate of Agricultural Engineers	Civil society	1	2	- Synergistic work	- Social support
Civil Society Organizations	Civil society	1	3	- Participate in managing of the Marshes, and set the needs of the locals living in the wetlands	- Data and information provider

Water Consuming Associations	Civil society	1	4	- Participate in the field water management process as part of the irrigation projects and contribute in the operation and maintenance of pumps for the purpose of water delivery to the ends of rivers	- Data and information provider	
Guidance centres	Civil society	1	3	- Expertise sharing		
Investors	Investors	1	4	- Strategic development of different sectors	- Project beneficiaries	
State companies	Public sector	1	4.4	- Strategic development - Expertise and knowledge sharing	- Project beneficiary - Social support	State Company for Electric and Electronic Industries State Company for fertilizer Manufacturing Iraqi State Company for Cement State Company for Petrochemical Industries Iraqi State Company for Construction Industries Al-zawraa State Company

It is evident that the respondents see an important role for the Ministries involved in the operation of the 4 key sectors (energy, industry, agriculture and water). In addition, Ministries of Planning and Finance are also seen as important decision makers, as decisions about project implementation and budget allocations are dependent on them. Baghdad municipality was brought forward as another important stakeholder, highlighting the potential for project implementation in the capital. Some public and private sector companies have also been mentioned as the potential project beneficiaries. However, more thorough review of the private sector landscape will likely be required as the project progresses. Civil society and industry associations have also been included potentially relevant stakeholders with access to important information and the social support and catalyzer.

It should also be noted that the list of stakeholders identified is, although comprehensive, but not necessarily exhaustive. As, throughout further project implementation, other important stakeholders are identified (especially when the specific technologies are identified and further scrutinized), they will also be included in the TNA process.

Engagement of stakeholders

Different stages of engagement

Upon identification of the key stakeholders, the team reviewed different approaches for engaging them, as to decide when and how best to involve the different stakeholder groups, so that the TNA process is effective and efficient.

The approach considering 3 key steps of the TNA process and relevant questions that will be answered at each of the steps are presented below³. Key stakeholders from the list identified above are selected for each of the step.

Step of the TNA	Relevant questions	Stakeholders identified
Technology identification and prioritization	<p>Who could provide information about environmentally sound technologies (EST)?</p> <p>Who could benefit from the results of the technology identification and prioritisation?</p> <p>Who is already using these (or similar) technologies?</p> <p>What government entities are involved in technology development or promotion?</p> <p>What government entities coordinate the sectors that will be analysed?</p> <p>Who are the leading institutions conducting research on climate change?</p> <p>What other organisations participate in the implementation of new technologies?</p>	<p>Ministry of Health and Environment</p> <p>Ministry of Electricity</p> <p>Ministry of Industry and Minerals</p> <p>Ministry of Oil</p> <p>Ministry of Agriculture</p> <p>Ministry of Water Resources</p> <p>Ministry of Finance</p> <p>Ministry of Planning</p> <p>Private sector technology providers</p> <p>Syndicate of Agricultural Engineers</p> <p>State companies</p>
Barrier analysis and enabling environment	<p>What stakeholders could be affected by the technology?</p> <p>What stakeholders could actively support or oppose the technology?</p> <p>Who may have influence or is needed to reduce or eliminate barriers?</p> <p>What organisations have experience in implementing environmentally sound technologies (EST)?</p>	<p>Farmers</p> <p>Farmers association</p> <p>Water Consuming Association</p> <p>Relevant Ministries as under Step 1</p> <p>State companies</p> <p>Importing companies</p> <p>Border ports authorities</p> <p>Civil Society Organizations</p>

³ Based on UNEP-DTU Partnership, 2015. Identification and engagement of stakeholders in the TNA process. Available at: <https://tech-action.unepdtu.org/publications/identification-and-engagement-of-stakeholders-in-the-tna-process/>

Technology action plans	<p>What government entities have influence in the generation of policies and goals for the priority sectors or technologies?</p> <p>What institutions have experience in technology investments?</p> <p>What organisations may provide funding for the implementation of technologies?</p> <p>Who are the current providers of the technologies?</p> <p>Which groups are the main beneficiaries of the technologies?</p>	<p>Same Ministries as under Step 1</p> <p>Council of Ministers</p> <p>Council of Parliaments</p> <p>Investors (International finance institutions, climate finance institutions, private investors)</p> <p>State companies and private sectors</p> <p>Farmers</p>
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Stakeholder consultation process – techniques

Finally, the approaches for collecting stakeholders feedback, information, decisions were reviewed. There is a significant amount of literature that provides recommendations for successful engagement of stakeholders, which the team relied on⁴. The key conclusions for the Iraqi context have been summarized below. It is worth mentioning that all of the methods have their advantages and drawbacks which should be considered when specific issues are being discussed (e.g. sensitivity of some stakeholders to data sharing, busy schedules of high officials, security situation related to in-person meeting in times of a pandemic, etc.)

Technique	Possible application in Iraq TNA process	Key groups of applicable stakeholders
Questionnaires and Surveys	<p>Step 1: Identification and prioritization of technologies:</p> <ul style="list-style-type: none"> To detail and confirm stakeholder information Organize content of stakeholder requirements Preview and select potential technologies 	<ul style="list-style-type: none"> Relevant sectoral Ministries Ministry of Planning Ministry of Science and Technology Industry associations Private sector technology providers Large state companies
Interviews	<p>Step 2: Barrier analysis and enabling framework:</p> <ul style="list-style-type: none"> Obtain information on a specific sub-sector and tech barriers Allow for the introduction of relevant new information or concerns 	<ul style="list-style-type: none"> Industry associations State companies Private sector Implementing agencies (e.g. Ministry of Health and Environment) and other decision-makers
Workshops and Focus Groups	<p>During all 3 steps:</p> <ul style="list-style-type: none"> Define priorities of requirements on sub-sectors and technologies Discover and resolves potential conflicts between stakeholders Identify requirements to establish solution scope within TAPs 	<ul style="list-style-type: none"> Key sector Ministries Relevant technology providers or importers Other Ministries involved in decision-making (e.g. Ministry of Planning and Ministry of Finance) Vulnerable groups (e.g. farmers, minorities, etc)

⁴ The approach described below is based on UNEP-DTU Partnership, 2015. Identification and engagement of stakeholders in the TNA process and CTCN Request Incubator Programme report “Mapping Climate Technology Stakeholders”

Public Forums	Most at the beginning and the end of the TNA process: <ul style="list-style-type: none"> • Communicate the TNA process to a larger audience 	<ul style="list-style-type: none"> • All possible stakeholders
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Brainstorming	During all 3 steps: <ul style="list-style-type: none"> • Resolve requirements or conflicts • Outline various options and solutions Can be part of the workshop or focus group	<ul style="list-style-type: none"> • Same as of Workshops and Focus Groups
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As with the list of stakeholders, the approach for engagement with stakeholders will remain flexible throughout the TNA process and different means will be used to make sure different opinions are collected, yet good progress is made to achieve the overall goals of the project. The implementing team together with the project management unit at the Ministry of Health and Environment will discuss and agree on the specific stakeholders, as well as engagement techniques prior to each of the three main activities of the TNA process.

Finally, the covid-19 pandemic situation will be taken into consideration to ensure safety of all participating stakeholders, so that meetings/discussions are either held remotely or with rigorous compliance with the rules on social distancing and hygiene.

Annex 1: Stakeholder identification tables – feedback collected from relevant institutions and organizations

Ministry of Oil

	Stakeholder	Category	Interests	Role	Relevance
	Name of identified stakeholder	<ul style="list-style-type: none"> - Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia 	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	<ul style="list-style-type: none"> - Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority) 	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Ministry of Electricity	Public sector/ governmental	<ul style="list-style-type: none"> - The ministry of oil provides fuel shares and oil products for power generation. - strategic development of the oil sectors and other stakeholders 	<ul style="list-style-type: none"> - Projects with general beneficiation - Project beneficiary (oil sector, and other stakeholders) 	4
2	Ministry of Water Resources	Public sector/ governmental	<ul style="list-style-type: none"> - The ministry of oil provides fuel shares and oil products for operating irrigation projects. 	<ul style="list-style-type: none"> - Projects with general beneficiation 	4
			<ul style="list-style-type: none"> - Implementation of other joint projects (cooperation) 	<ul style="list-style-type: none"> - Project beneficiary 	4

3	Ministry of Industry	Public sector/ governmental	- The ministry of oil provides fuel shares and oil products for operating Plants and production units.	- Projects with general beneficiation	3
			- Implementation of other joint projects (cooperation)	- Project beneficiary	4
4	Baghdad Municipality	Public sector/ governmental	- The ministry of oil provides fuel shares and oil products for operating liquefaction stations (drinking water and sewage water)	- Projects with general beneficiation (oil sector, and other stakeholders)	4
5	Ministry of Transportation	Public sector/ governmental	- The ministry of oil provides fuel shares and oil products for operating different transportation vehicles	- Projects with general beneficiation	4
6	Ministry of Science and Technology	Public sector/ governmental	- Expertise and knowledge sharing, and exchanging data	- Providing data and information	3
			- Implementation of other joint projects (cooperation)	- Project beneficiary	3
7	Ministry of Higher Education and Scientific Research	Public sector/ governmental	- Expertise and knowledge sharing, and exchanging data to conduct research and studies	- Providing data and information	3

8	Ministry of Planning	Public sector/ governmental	<ul style="list-style-type: none"> - Strategic development of the oil sector through joint contribution in setting the investment budget for the oil sector projects 	<ul style="list-style-type: none"> - Project beneficiary - Institutional support 	5
9	Ministry of Health and Environment	Public sector/ governmental	<ul style="list-style-type: none"> - Cooperation; exchanging environmental pollution data and information; apply solutions, and monitor and assess the environmental response 	<ul style="list-style-type: none"> - Providing data and information 	4
10	Ministry of Finance	Public sector/ governmental	<ul style="list-style-type: none"> - Approval of launching the Ministry of Oil's financial allocations (strategic development of the oil sector) 	<ul style="list-style-type: none"> - Benefit from the allocated amounts to implement the ministry's projects 	5
11	Ministry of Interior	Public sector/ governmental	<ul style="list-style-type: none"> - Cooperation (synergistic work) - The ministry of oil provides fuel shares and oil products 	<ul style="list-style-type: none"> - providing data and information - Logistic support 	4
12	Ministry of Defence	Public sector/ governmental	<ul style="list-style-type: none"> - Cooperation (synergistic work) 	<ul style="list-style-type: none"> - providing data and information - Logistic support 	4

			- The ministry of oil provides fuel shares and oil products		
13	Non-governmental Industries	Private sector	- Strategic development of the sector through joint projects	- Project beneficiary	4

Ministry of Industry and Minerals

	Stakeholder	Category	Interests	Role	Relevance
	Name of identified stakeholder	- Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	- Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority)	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Department of Industrial Development and Organization/ Ministry of Industry and Minerals	Public sector	- Strategic development - Expertise and knowledge sharing - Synergistic work	- Providing Data and Information - Social support	5
2	Al-zawraa State Company/ Ministry of Industry and Minerals	Public sector	- Strategic development - Expertise and knowledge sharing	- Project beneficiary - Social support	5
3	State Company for Electric and Electronic Industries/ Ministry of Industry and Minerals	Public sector	- Strategic development - Expertise and knowledge sharing	- Project beneficiary - Social support	5
4	Ministry of Electricity	Public sector	- Synergy with other projects	- Project beneficiary	5
5	Iraqi State Company for Cement/ Ministry of Industry	Public sector	- Strategic development	- Project beneficiary - Social support	4

	and Minerals/ Ministry of Industry and Minerals		- Expertise and knowledge sharing		
6	Iraqi State Company for Construction Industries/ Ministry of Industry and Minerals/ Ministry of Industry and Minerals	Public sector	- Strategic development - Expertise and knowledge sharing	- Project beneficiary - Social support	4
7	General Directorate of Industrial Development/ Ministry of Industry and Minerals	Public sector	- Strategic development - Expertise and knowledge sharing	- Project beneficiary - Social support	5
8	State Company for fertilizer Manufacturing/ Ministry of Industry and Minerals	Public sector	- Strategic development - Expertise and knowledge sharing	- Project beneficiary - Social support	4
9	State Company for Petrochemical Industries/ Ministry of Industry and Minerals	Public sector	- Strategic development - Expertise and knowledge sharing	- Project beneficiary - Social support	4
10	Ministry of Agriculture	Public sector	- Synergy with other projects	- Project beneficiary	4
11	Baghdad Municipality	Public sector	- Synergy with other projects	- Project beneficiary	4
12	Ministry of Electricity	Public sector	- Synergy with other projects	- Project beneficiary	4
13	Ministry of Construction and Housing	Public sector	- Synergy with other projects	- Project beneficiary	4
14	Private sector	Private sector	- Synergy with other projects	- Project beneficiary	4

Ministry of Agriculture

Stakeholder	Category	Interests	Role	Relevance
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	Name of identified stakeholder	<ul style="list-style-type: none"> - Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia 	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	<ul style="list-style-type: none"> - Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority) 	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Farmers	- Private sector	- Synergistic work	- Project beneficiary	2
2	Livestock Breeders	- Private sector	- Synergistic work - Financial gain	- Project beneficiary	3
3	Seed Producers	- Private sector	- Strategic development of the sector	- Data or information provider	3
4	Beekeepers	- Private sector	- Synergistic work - Financial gain	- Project beneficiary	2
5	Guidance centres	- Public sector/ governmental	- Expertise sharing		3
6	Ministry of Commerce	- Public sector/ governmental	- Synergistic work	- Social support	4
7	Farmers Associations	- Civil organizations	- Synergistic work	- Social support	3
8	Syndicate of Agricultural Engineers	- Civil organizations	- Synergistic work	- Social support	2
9	Importers	- Private sector	- Financial gain	- Project beneficiary	3
10	Importing and exporting Companies	- Private sector	- Financial gain	- Project beneficiary	3

Ministry of Water Resources

	Stakeholder	Category	Interests	Role	Relevance
	Name of identified stakeholder	<ul style="list-style-type: none"> - Private sector - Public sector (state, regional municipal) - Civil society - Media 	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	<ul style="list-style-type: none"> - Political decision maker - Data or information provider (academia, industry) - Project beneficiary 	Importance to technology transfer process

		- Academia		- Social and institutional support (NGOs, local authority)	
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Ministry of Agriculture	- Public sector/ state	Increase the usage quality of Irrigation water in irrigation projects, resulting in an increase of the agricultural area, and reduces the negative impact of climate change in mitigation and adaptation	- Project beneficiary - Profitable projects that contribute to supplying the national production with foodstuffs and the production of forage and industrial crops that have a positive impact in terms of technical, social, economic and environmental aspects.	5
2	Ministry of Oil	- Public sector/ state	Allocating the water share for its current and future projects, like oil fields (treating salty water and desalinating it before reinjecting) and oil refineries (treating water sent back to rivers, according to environmental determinants.	- Project beneficiary - Profitable projects that contribute to boosting the national production with the oil industries and the export of petroleum products	1
3	Ministry of Health and Environment	- Public sector/ state	Exchanged cooperation in monitoring and assessing the water quality of main rivers' streams, for human and agricultural use and hold accountable those that	- Data or information provider - Delivering safe drinking water to users and treating wastewater	5

			violate the laws and instructions of rivers' courses		
4	Baghdad Municipality and Ministry of Construction and Housing and General Work	- Public sector/ state	Allocating the water share for its current and future projects, for water liquification stations, compacts units (CU), and treatment of river back water according to environmental determinants. As for the treatments in the wastewater stations it requires a tri-treatment before its discharge to the rivers	- Project beneficiary	5
5	Ministry of Industry	- Public sector/ state	Allocating the water share for its current and future projects for factories, and treatment of back water to the rivers according to the environmental determinants	- Project beneficiary	1
6	Ministry of Electricity	- Public sector/ state	Allocating the water share for its current and future projects, for gaseous, steam and thermal electricity station, and treatment of back water according to environmental determinants. In addition to a collaborated coordination to build electromagnetic power dams to produce electricity from clean power.	- Project beneficiary	5

Ministry of Planning

	Stakeholder	Category	Interests	Role	Relevance
	Name of identified stakeholder	<ul style="list-style-type: none"> - Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia 	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	<ul style="list-style-type: none"> - Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority) 	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Maysoon Abduljawad/ Ministry of Planning Maysoonabd90@gmail.com	Public sector/ governmental	Strategic development of the sector	Providing data and information (academia, industry)	Suggestion of policies and developmental markers, to develop sectors in coordination with the ministries and bodies not linked to a ministry, region, or governorate.
2	Ministry of Health and Environment		Expertise and knowledge sharing	Social and institutional support (NGOs, local authority)	Assess the technical, economic, and environmental feasibility study for the sectors' projects
3	Ministry of Water Resources		Synergy with other projects		Participating in preparing and assessing the studies and research of different developmental aspects with relation to sectors
4	Ministry of Agriculture		Financial gain		Support the investment projects through enhancing the planning visions of the ministries, and stakeholders, and promote investment projects and their implementation
5	Ministry of Electricity				

6	Ministry of Oil				
7	Ministry of Industry and Minerals				
8	Ministry of Construction and Housing				
9	Ministry of Higher Education and Scientific Research				
10	Ministry of Science and Technology				

Ministry of Higher Education

	Stakeholder	Category	Interests	Role	Relevance
	Name of identified stakeholder	<ul style="list-style-type: none"> - Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia 	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	<ul style="list-style-type: none"> - Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority) 	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	<ul style="list-style-type: none"> - The Ministry of Higher Education and Scientific Research intersects with all sectors, hence all ministries relating to the four sectors like Agriculture, Industry, Water resources, Municipality... etc. - Professor Dr.. Aws Hilal Hilal Jasim/ Ministry of Higher Education/ 	<ul style="list-style-type: none"> - Public sector/ governmental/ academia 	<ul style="list-style-type: none"> - Strategic development of the sector - Expertise and knowledge sharing - Synergistic work - Research contributions 	<ul style="list-style-type: none"> - Data and information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority), awareness in coordination with NGOs 	<ul style="list-style-type: none"> - Strategic development of the sector = 2 - Expertise and knowledge sharing = 4 - Synergistic work = 5 - Research contributions = 5 - Data and information provider (academia, industry) = 4 - Project beneficiary = 3 - Social and institutional support (NGOs, local authority), awareness in

	Department of Research and Development - Professor Dr. Abdulhameed Muhammed Jawad/ Environmental Research Centre/ University of Technology				coordination with NGOs = 4 - Total = 27 - Average = 3
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Ministry of Science and Technology

	Stakeholder	Category	Interests	Role	Relevance
	Name of identified stakeholder	- Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	- Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority)	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Ministry of Agriculture	Public sector/ governmental	- Strategic development of the sector - Expertise and knowledge sharing - Synergy with other projects	- Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority)	4
2	Ministry of Health and Environment	Public sector/ governmental	- Strategic development of the sector - Expertise and knowledge sharing - Synergy with other projects	- Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority)	4

3	Ministry of Water Resources	Public sector/ governmental	<ul style="list-style-type: none"> - Strategic development of the sector - Expertise and knowledge sharing - Synergy with other projects 	<ul style="list-style-type: none"> - Data or information provider (academia, industry) - Project beneficiary 	4
4	Baghdad Municipality	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Data or information provider (academia, industry) - Project beneficiary 	4
5	Ministry of Electricity	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Project beneficiary 	4
6	Ministry of Construction and Housing	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Data or information provider (academia, industry) - Project beneficiary 	4
7	Ministry of Industry	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Data or information provider (academia, industry) - Project beneficiary 	3
8	Ministry of Higher Education	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Data or information provider (academia) 	2
9	Ministry of Oil	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Project beneficiary 	2
10	Ministry of Interior	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Project beneficiary 	2
11	Ministry of Education	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Project beneficiary 	2
12	Border ports Authorities	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Project beneficiary 	2
13	Public traffic authorities	Public sector/ governmental	<ul style="list-style-type: none"> - Synergy with other projects 	<ul style="list-style-type: none"> - Project beneficiary 	2

Ministry of Transportation

Stakeholder	Category	Interests	Role	Relevance
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	Name of identified stakeholder	<ul style="list-style-type: none"> - Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia 	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	<ul style="list-style-type: none"> - Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority) 	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Ministry of Transportation/ General Authority for Air Meteorology	<ul style="list-style-type: none"> - Public sector 	<ul style="list-style-type: none"> - Expertise sharing - Synergistic work 	<ul style="list-style-type: none"> - Data and information provider 	3
2	Council of Ministers	<ul style="list-style-type: none"> - Public sector 	<ul style="list-style-type: none"> - Strategic development 	<ul style="list-style-type: none"> - Political decision maker 	3
3	Council of Parliaments	<ul style="list-style-type: none"> - Public sector 	<ul style="list-style-type: none"> - Strategic development 	<ul style="list-style-type: none"> - Political decision maker 	3
4	Ministry of Oil	<ul style="list-style-type: none"> - Public sector 	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Support 	4
5	Ministry of Electricity	<ul style="list-style-type: none"> - Public sector 	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Support - Information provider (industry) 	3
6	Ministry of Higher Education	<ul style="list-style-type: none"> - Public and private sectors (academics and students) 	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Project beneficiary 	2
7	Ministry of Finance	<ul style="list-style-type: none"> - Public sector 	<ul style="list-style-type: none"> - financial gain 	<ul style="list-style-type: none"> - Support 	5
8	Ministry of Planning	<ul style="list-style-type: none"> - Public sector 	<ul style="list-style-type: none"> - Strategic development of the sector 	<ul style="list-style-type: none"> - Support 	5
9	Private Sector	<ul style="list-style-type: none"> - Private Sector 	<ul style="list-style-type: none"> - Synergistic work - Expertise sharing 	<ul style="list-style-type: none"> - Support - Project beneficiary 	4
10	Mixed Sector	<ul style="list-style-type: none"> - Public and private sectors 	<ul style="list-style-type: none"> - Synergistic work - Expertise sharing 	<ul style="list-style-type: none"> - Support - Project beneficiary 	3
11	Public traffic Authority	<ul style="list-style-type: none"> - Private Sector 	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Data provider - Support 	3
12	The customs	<ul style="list-style-type: none"> - Private Sector 	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Support 	3
13	Housing	<ul style="list-style-type: none"> - Private Sector 	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Support the infrastructure 	4

Ministry of Construction and Housing

	Stakeholder	Category	Interests	Role	Relevance
	Name of identified stakeholder	<ul style="list-style-type: none"> - Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia 	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	<ul style="list-style-type: none"> - Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority) 	Importance to technology transfer process
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>
1	Ministry of Construction and Housing	Public sector/ governmental	<ul style="list-style-type: none"> - Strategic development of the sector - Expertise sharing - Synergistic work - increase financial gain through properties 	<ul style="list-style-type: none"> - Decision maker, - Synergistic work - Data provider - Project beneficiary 	5
2	Ministry of Health and Environment	Public sector/ governmental	<ul style="list-style-type: none"> - Expertise and knowledge sharing - Synergy with other projects 	<ul style="list-style-type: none"> - Data or information provider - Social and institutional support (NGOs) 	5
3	Ministry of Oil	Public sector/ governmental	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Support 	3
4	Ministry of Electricity	Public sector/ governmental	<ul style="list-style-type: none"> - Synergistic work 	<ul style="list-style-type: none"> - Social and institutional support (Industrial aspect) 	4
5	Ministry of Planning	Public sector/ governmental	<ul style="list-style-type: none"> - Expertise and knowledge sharing 	<ul style="list-style-type: none"> - Data and information provider - Project beneficiary - Social and institutional support 	5
6	Ministry of Higher Education	Public sector/ governmental	<ul style="list-style-type: none"> - Expertise and knowledge sharing 	<ul style="list-style-type: none"> - Data and information provider + support 	3

7	Ministry of Finance	Public sector/ governmental	- Increase financing and allocations	- Political decision maker	5
8	Baghdad Municipality	Public	- Synergistic work and strategic development	- Expertise sharing - Decision maker	5
9		Private sector	- Synergistic work	- Project beneficiary	4
10		Both public and private sectors	- Synergistic work	- Project beneficiary	4

Baghdad municipality

	Stakeholder	Category	Interests	Role	Relevance	Notes
	Name of identified stakeholder	- Private sector - Public sector (state, regional municipal) - Civil society - Media - Academia	Strategic development of the sector, knowledge sharing, strategic development, synergy with other projects, financial gain, etc.	- Political decision maker - Data or information provider (academia, industry) - Project beneficiary - Social and institutional support (NGOs, local authority)	Importance to technology transfer process	
	<i>Institution and, if possible, name and contact information</i>	<i>Select one of the categories above. Add your own category if needed</i>	<i>Select one or several of the potential interests of the stakeholders in the TNA process</i>	<i>Select one or several of the categories above. Add your own category if needed.</i>	<i>How important is this stakeholder for TNA process? Rank from 1 to 5, where 1 is least important, 5 – most important</i>	
1	Ministry of Electricity	- Public sector/ governmental	- Synergy with other projects	- Project beneficiary	3	Generation of energy from waste, sold to the Ministry of Electricity
2	Ministry of Agriculture	- Public sector/ governmental	- Synergy with other projects	- Data or information provider (academia, industry)	2	To do joint projects: Green belts, glass houses, and organic waste recycling to produce fertilizers
3	Ministry of Science and Technology	- Public sector/ governmental	- Expertise and knowledge sharing	- Technical support	4	Technical support and providing studies and research

4	Ministry of Industry	- Public sector/ governmental	- Synergy with other projects	- Project beneficiary	3	Provide sorted material for the purpose of recycling
5	Ministry of Water Resources	- Public sector/ governmental	- Synergy with other projects	- Project beneficiary	3	Technical and institutional support, to provide social services in the field of suitable drinking water
6	Private Sector	- Private sector	- Strategic development of the sector	- Project beneficiary	3	Implement projects regarding waste management
7	Investors	- Private sector	- Strategic development of the sector	- Project beneficiary	4	Implement projects regarding waste management